IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Mark L. Ernest et al.

Application No.: 10/005,862

Confirmation No.: 2036

Filed: November 8, 2001

Art Unit: 3623

For: AUTOMATED INFORMATION
       TECHNOLOGY MANAGEMENT SYSTEM

Examiner: B. Van Doren

SUPPLEMENTAL APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The undersigned hereby submits a Supplemental Brief on Appeal under 37 C.F.R. § 1.192 and in response to Notice of Non-Compliant Appeal Brief mailed on July 11, 2006. An Appeal Brief was filed in connection with the above-identified patent application on January 20, 2004. In response thereto, the Examiner re-opened prosecution. On November 23, 2004, the Examiner issued a Final Rejection. As a result, another Appeal Brief was submitted on March 1, 2005. It is respectfully requested that the Appeal be reinstated, and this Supplemental Appeal Brief be included in the record.

The fees required under § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I.   REAL PARTY IN INTEREST

The real party in interest in this application remains the International Business Machines Corporation.

II.   RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III.   STATUS OF CLAIMS

Claims 1-16 are pending in the application. Claims 1-16 are pending on appeal. No claims have been allowed.

IV.   STATUS OF AMENDMENTS

There are no unentered amendments filed in this application.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is a system and process for managing information technology (IT) hardware and software infrastructures that collects transaction information on a component basis. In particular, the process and system of the present invention permits real-time monitoring of operational level values (e.g., data usage, business value) within an IT system. These value-generating factors are ultimately used to make automated tactical and strategic decisions based on predetermined criteria for the values.

FIG. 2 shows business values that are based on the revenue and cost associated with each service of the IT infrastructure.[1] The business values may be determined precisely based on the monetary value of each transaction, total dollar value of the transaction, or it could be generalized based on transaction types (i.e., an approximated value for a class of services such as email or on-time billing).[2] In this way, the value of the components to the system can be determined based on the value of the services performed. The value of the component to the system is shown in FIG. 2 as the sum of its values for each of the services provided.[3]

FIG. 3 illustrates the components of an exemplary IT infrastructure that includes a mainframe computer **11** that is interconnected with a DASD **12**, printer **15**, servers **16-17**, routers **18-19**, data terminals **21** and data transfer device **22**.[4] Associated with each of the components **11, 12, 15-17, 18, 19, 21, 22** of the IT system is at least one agent **24**.[5] The at least one agent **24** runs on a dedicated processor associated with each of the components and identifies each transaction in each service in which a respective component participates.[6] In accordance with the present invention, the business value of each service is allocated to the component for each business function requesting a service.[7]

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[1] Specification at FIG. 2; page 11, lines 21-22.
[2] *Id.* at page 11, lines 22-26.
[3] *Id.* at page 12, lines 14-15.
[4] *Id.* at FIG. 3; page 11, lines 10-14.
[5] *Id.* at FIG. 3, reference **24**.
[6] *Id.* at FIG. 3, page 11, lines 16-19.
[7] *Id.* at page 11, lines 19-21.
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The agents **24** of FIG. 3 report data identifying each transaction in which a related component or software of the system participated.[8] The data is reported over the network of the IT structure to a computer which defines the model.[9] The table of FIG. 4 helps demonstrate the total value of the service to the business entity. In particular, the data of FIG. 4 identifies an IT infrastructure with a total value of $26,072.86.[10] As discussed above, the valuations are based on the type of transaction, wherein some transactions have a low value/transaction, while others, such as wire transfers, have a very high valuation base on a total revenue valuation.

The information shown in FIG. 4 may than be used by the system evaluators to plan on and manage system upgrades which can be justified with such data.[11] For example, services returning a high valuation can then be expanded or upgraded with additional components. Based on the type of transaction, and participation of individual components in the transaction, it is possible to plan system upgrades to components by taking into account their relative value to the system.

The use of such collected data in a process model and can be illustrated with respect to FIG. 5.[12] In FIG. 5, each agent **24** periodically reports the accumulated data related to a component on which it is installed to a Sustain Service Delivery Capability process **A64**.[13] The Sustain Service Delivery Capability Process **A64** accumulates the data from the agents **24** and creates the tables of FIGS. 2 and 4 discussed above. These reports are provided to the Establish IT Value process **A31**.[14] The accumulated data is also utilized by tactical processes such as Manage Performance and Capacity **A76**, Manage Problems **A77**, and Manage Availability **A72**.[15] The accumulated data is also offloaded to the Manage IT Assets and Infrastructure processes **A84**, which is responsible for initial valuation judgments.[16] This process is responsible for making tactical decisions regarding the replacement of equipment exhibiting

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[8] *Id.* at page 12, lines 16-17.
[9] *Id.* at page 12, lines 17-18.
[10] *Id.* at page 12, lines 19-20.
[11] *Id.* at page 12, lines 21-22.
[12] *Id.* at FIG. 5; page 12, lines 25-26.
[13] *Id.* at FIG. 5; page 12, lines 26-28.
[14] *Id.* at FIG. 5; page 13, lines 7.
[15] *Id.* at FIG. 5; page 13, lines 8-9.
[16] *Id.* at FIG. 5; page 13, lines 11-12.
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higher than average failure rates, upon recommendations from the problem management process **A77**, or insufficient capacity to maintain adequate performance levels, as recommended by the capacity planning process **A76**.[17] These decisions to replace equipment are then sent on to Procure Services and Components process **A82**.[18] However, rather than a purely technical decision, involvement of these processes allows the decision to be based on business valuation, according to a return-on-investment model.[19] The pricing and billing for customer usage is done by process **A83**, can be made much more granular, based on actual usage of infrastructure components reported by the agents **24** and the subsequently determined business value.[20]

These business rules, created by the Establish IT Value process **A31**, but developed from operational data, would also be made available to process group **A5**, Deploy Solutions.[21] As with problem management, the urgency of change requests for critical components can be modified based on these new business rules, as could the schedule for when changes are introduced.[22] Based on predictive analysis of operational data, change requests could be accelerated or deferred in order to reduce the risk associated with such changes.[23] Finally, the accumulated data is made available to remaining processes in Group **A3** the Manage IT Value set of processes, where it is utilized for strategy level decisions.[24]

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

As to the rejection under 35 U.S.C. § 101, claims 1-9 stand and fall together and claims 10-11 stand and fall together and claims 12-16 stand and fall together. As to the rejection under 35 U.S.C. § 112, claim 1 stands by itself.

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[17] *Id.* at FIG. 5; page 13, lines 14-16.
[18] *Id.* at FIG. 5; page 13, lines 16-17.
[19] *Id.* at FIG. 5; page 13, lines 20-21.
[20] *Id.* at FIG. 5; page 13, lines 21-23.
[21] *Id.* at FIG. 5; page 13, lines 24-26.
[22] *Id.* at FIG. 5; page 13, lines 26-28.
[23] *Id.* at page 13, line 28 – page 14, line 2.
[24] *Id.* at page 14, lines 9 -10.

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As to the rejection under claims 1-16 under 35 U.S.C. § 102, claims 1 and 5-9 stand and fall together. Claims 2, 3, 4 and 16 stand alone. Claims 10, 11 and 12 stand and fall together. Claims 13 and 14 stand and fall together.

VII.   ARGUMENT

<u>The Rejection under 35 U.S.C. § 101</u>

The rejection under 35 U.S.C. § 101 as set forth on page 7 of the Final Rejection is stated as follows:

> Claims 1-16 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. The basis of this rejection is set forth in a two-prong test of: (1) whether the invention is within the technological arts; and (2) whether the invention produces a useful, concrete, and tangible result. For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

The basis of this rejection is set forth as the two-prong test of: (1) whether the invention is within the technological arts; and (2) whether the invention produces a useful concrete and tangible result.

The rejected claims are within the technological arts. Claim 1 describes a computerized process to manage an information technology system having a plurality of components that provide a plurality of services. Claim 10 is directed to a system for managing an IT infrastructure which has a plurality of components. Claim 12, likewise, is directed to a system for managing an IT infrastructure.

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As for claims 1-10, numerous steps relating to a statutory process are recited. This includes the steps of (1) collecting at each of the components usage data indicating an amount of use each component receives, (2) reporting the usage data, constructing an evaluation function for evaluating each service and correlating each service with each component used to provide the service, and then determining from the correlated services and components the value of each component and the value of component to the IT system (claim 1).

Under the Commissioners Guidelines for Examining Computer Related Inventions, MPEP 2106, subject matter which is not part of the four statutory categories of invention, set forth in 35 U.S.C. § 101, i.e., processes, machines, manufactures and compositions of matter, is limited to abstract ideas, laws of nature and natural phenomena. These three exclusions of non-statutory subject matter do not consist of a practical application or use of an idea, law of nature or nature phenomena and are not, therefore, patentable. In practical terms, claims do not define a statutory processes if they consist solely of mathematical operations without some claimed practical application (i.e., executing a mathematical algorithm) or simply manipulate abstract ideas without some claimed practical application. The recited steps of collecting usage data for providing a service at a component, then reporting the usage data is more than the manipulation of abstract ideas.

The foregoing rejected claims clearly recite a practical application, in that they are directed to collecting and manipulating data for the purposes of managing an IT system. System claims 10-16 are directed to apparatus for managing an IT infrastructure system. Claim 1 recites the practical application of managing the integrated information technology system by determining the value of each component based on the services performed, and the value of each of the components to the system. Thus, the process does not provide mere ideas in the abstract that do not apply, involve, use or advance the technology arts.

The evaluation of a component is the kind of useful, concrete and tangible result which meets the requirements of 35 U.S.C. § 101. The claimed invention as a whole accomplishes the practical application of managing an IT system, by evaluating components used therein, and produces useful, concrete and tangible results as required in State Street Bank and Trust Co. v. Signature Financial Group, Inc. 149 3rd. 1368 1374, 47 USPQ 2d. 1596, 1601-1602 (Fed. Cir. 1998).

The rejected claims also fall within the pre-computer process activity, "safe harbor" of the guidelines. The present claims all require that data be collected reflecting the usage of different components of an IT system.

The Rejection under 35 U.S.C. § 112

Claim 1 is objected to according to the Final Rejection:

> As per claim 1, claim 1 is directed towards managing an integrated IT system having a plurality of components. The claim recites the steps of "reporting the usage data of each component for each service" "constructing a valuation function for valuing each service", and "determining from said correlated services and components a value of each component and a value of said IT system".[25] It is unclear based on these limitations what the applicant regards as his invention because these limitations fail to identify what is occurring in the process. First, it is unclear as to who or what the usage data is being reported. Second, it is unclear as to how and/or when a valuation function is being constructed and what valuation function is specifically being used. Third, it is unclear how values for components and a value for an IT system is determined based on correlations. Therefore, based on these limitations, it is unclear as to what is distinctly occurring by the Applicant's invention. Clarification and correction is required.

MPEP 2173.02 describes the requirements for clarity and precision under 35 U.S.C. § 112, second paragraph.

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[25] During prosecution, the claim was inadvertently changed from reciting a value to said IT system to a value of said IT system. Applicants will treat the claims as though it was unamended in this respect using the former recitation.
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The essential inquiry pertaining to this requirement is whether the claim sets out and circumscribes a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but, in light of:

  (a) The content of the particular application disclosure;
  (b) The teachings of the prior art; and
  (c) The claim interpretation that would be given by one in possession the ordinary level skill in the portent art at the time the invention was made.

The test for definiteness under 35 U.S.C. § 112, second paragraph is whether "those skilled in the art would understand what is claimed when the claim is read in light of the specification." Authoconnects, Inc. v. Safety Travel Chairs, Inc. 806 F2d. 1565, 1576, 1 USPQ 2d. 1081, 1088 (Fed. Cir. 1986). If one skilled in the art is able to ascertain the meaning of the terms in light of the specification, 35 U.S.C. § 112, second paragraph, is satisfied.

As noted during the prosecution of the application, the Examiner is imposing a requirement which is non-statutory. Specifically, the foregoing section of the MPEP and the relevant case law do not require the claims to identify in each limitation what is occurring in the process. The requirement that the claim be read in light of the specification will satisfy any need to understand what is occurring in the process.

Rejection of Claims under 35 U.S.C. § 102(a) and (e)

MPEP § 2131 sets forth the requirements for a reference to anticipate a claim.

> In order to anticipate a claim, the reference must teach every element of the claim. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference Vetigal Brothers v. Union Oil Co. of California, 814 F2d. 628631 to USPQ 2d. 1051, 1053 (Fed. Cir. 1987). It is clear that the cited reference does not meet this requirement in several respects.

Per claim 1, the elements of the claim are as follows: (1) collecting in each of the components usage data indicating an amount of use each component receives in providing each of the services, (2) reporting the usage data of each component for each services, (3) constructing an evaluation function for evaluating each service, (4) correlating each service with each component used to provide said service; and (5) determining from said correlated services and components the value of each component and a value to said IT system.

The cited reference does not disclose any structure or process to collect any such usage data as defined above. The reference creates models of the system, and, based on the performance of the models, effects management of the system. The dynamic learning model is derived by determining various thresholds for system performance which are referred to as service level agreements (SLA's). These are numerical values which represent some particular physical threshold of a system component. In the example of the patent, the access time to a server is one such SLA. Values of component performance are determined from a test program or simulation and collected in a data base. The data collected in response to the test data is used to update an IT model of the system. In this way, performance of the system can be modeled.

This structure in no way suggests the ability to determine the value of a component, based on its role in performing a service by the IT system. The present invention, as set forth in exemplary claim 1 above, collects actual usage data for each component at the component level for each service. This usage data can be used to evaluate the specific value of the component to each of the services, as well as to the overall system. In claims 10-16, an agent is provided for carrying out this feature which is not disclosed in the reference.

In reviewing the reference, there is no such structure which can be shown that collects usage data and uses such usage data to evaluate the value of components of the system. The comments contained in the Final Rejection regarding Adriaans et al., particularly item 13 in the Final Rejection, are not supported at the particular locations referenced in the rejection. Specifically, the step of collecting in each of the components usage data indicating an amount of use each component receives for each system is not disclosed in the abstract, nor in col. 5, 6, 9

and 11. The subject reference uses various test programs to simulate actual system transactions, and measures the physical performance of the system components in response to such test programs, not <u>usage</u> data which can be used to determine a <u>value</u> of a component.

The Final Rejection statement that the step of constructing an evaluation function for evaluating each service is disclosed in the abstract, FIG. 4, col. 5, lines 30-50, col. 6, lines 15-35, col. 8, lines 44-60 and col. 9, lines 45-67 is unsupported by the reference. The reference does not make any calculation to evaluate each service, nor does it correlate each service with a component to provide the service.

The remaining claims in the case carry similar limitations not shown or disclosed in the reference. These limitations include claim 2, wherein in the component value is determined from usage statistics accumulated at each component. The step of evaluating the worth of each component (claim 3) based on multiple uses of the component in multiple services performed by the system, a step of constructing a relationship table (claims 4, 13 and 16) identifying the components used in providing each service are not disclosed in the reference.

The resolution of the issue under 35 U.S.C. § 102 is a factual issue, wherein each and every element of the claims must be disclosed in the cited reference. As shown above, the reference fails to anticipate each and every element of <u>any claim.</u>

VIII.   CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A do include the amendments filed by Applicant on September 7, 2004.

Dated: August 11, 2006   Respectfully submitted,

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APPENDIX A-CLAIMS ON APPEAL

Claims Involved in the Appeal of Application Serial No. 10/005,862

Listing of Claims:

1.   (Previously presented) A computerized process for managing an integrated information technology (IT) system having a plurality of components and providing a plurality of services, the process comprising the steps of:

collecting, at each of the components, usage data indicating an amount of use each component receives in providing each of the services,

reporting the usage data of each component for each service;

constructing a valuation function for valuing each service,

correlating each service with each component used to provide said service; and

determining from said correlated services and components a value of each component and a value to said IT system.

2.   (Previously presented) The process according to claim 1, wherein said component value is determined from usage statistics accumulated at each component.

3.   (Original) The process according to claim 2, further comprising the step of evaluating a worth of each component based on multiple uses of said component in multiple services performed by said IT system.

4.   (Original) The process according to claim 1, further comprising the step of constructing a relationship table identifying the components used in providing each service, wherein a configuration management process is fed by a change management process in order to maintain the relationship table as changes to said IT system are made.

5.   (Original) The process according to claim 1, wherein valuing a given service comprises determining a value for each transaction conducted in providing that service.

6.   (Original) The process according to claim 1, further comprising the step of providing for each component an agent for accumulating transaction data regarding services provided using that component.

7.   (Original) The process according to claim 6, wherein said value is determined in said determining step in accordance with the transaction data.

8.   (Original) The process according to claim 6, wherein said transaction data includes the type of transaction and a value associated therewith.

9.   (Original) The process according to claim 6, further comprising the step of reporting the transaction data.

10.   (Previously presented) A system for managing an IT infrastructure having a plurality of components for providing a plurality of services, said system comprising:

an agent associated with each of the components, said agent identifying each transaction of a service performed by said IT infrastructure; and

an information collection system for collecting from said agents transaction information relating to each service performed, said system determining from said transaction information which of said components are involved in said transaction.

11.   (Original) The system according to claim 10, wherein said information collection system provides a report which identifies for each service the value of said service and the value of the components used in providing said service.

12.   (Original) A system for managing an IT infrastructure comprising:

an information technology process model which defines a plurality of groups of processes defining information flow for an integrated management model defining the IT infrastructure for a plurality of IT services; and

a plurality of agents for monitoring each component of said IT infrastructure, said agents collecting transaction information identifying each transaction by service type;

said agents reporting over said IT infrastructure transaction information to said information process model whereby said information is used by said model.

13.   (Original) The system for managing an IT infrastructure according to claim 12 wherein said information is processed to provide a table which identifies for each component the service in which the component participates.

14.   (Previously presented) The system for managing an IT infrastructure according to claim 13 wherein said information from said agents are processed to derive a second table identifying a total value of each service based on said information.

15.   (Original) The system for managing an IT infrastructure according to claim 14 wherein said total value is determined for at least some of said services based on the number of transactions performed by said services.

16.   (Previously presented) The system for managing an IT infrastructure according to claim 13 wherein said first table includes a valuation of each component based on said component's participation in each of said services.

APPENDIX B-EVIDENCE

NONE

APPENDIX C-RELATED PROCEEDINGS

NONE